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# Aves, Cardinalidae, *Piranga flava* (Vieillot, 1822): Filling gaps by means of historical and recent records in the state of Rio Grande do Sul, southern Brazil

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**ABSTRACT:** The Hepatic Tanager *Piranga flava* (Vieillot, 1822) is considered rare in southern Brazil and its occurrence in southeastern Rio Grande do Sul is controversial. Here, our aims were to investigate and compile the historical and recent evidences of the species in this region by consulting museums, literature and providing documented recent records. We confirmed the origins of two old specimens and provided nineteen recent records obtained in five sites between 2008 and 2010. Our results show that *Piranga flava* occurs in southeastern of Rio Grande do Sul since the late 1800s and currently may be found all year long in this region.

The Hepatic Tanager *Piranga flava* (Vieillot, 1822) is widespread in the Americas and ranges from southwestern United States to northern Argentina, Uruguay and Brazil (Sick 1997). In southern Brazil, specifically in the states of Santa Catarina and Rio Grande do Sul, the species is considered rare (Belton 1994; Rosário 1996).

In the state of Rio Grande do Sul, only three reliable records in the western part of the state and five in the northern/northeastern part were reported by Belton (1994) between 1970 and 1983. Thus, there is a remarkable gap of distribution in the central and southeastern regions of the state, since the origins of three old specimens from this area are controversial (Belton 1994; Bencke 1997).

Here we investigate and compile the historical and recent occurrence of *P. flava* in southeastern Rio Grande do Sul. To access label information about the old specimens mentioned in Belton (1994) we consulted curators of ornithological collections of National Museum of Natural History (France), British Museum of Natural History (England) and Senckenberg Museum (Germany). The literature was reviewed through systematic searches in online databases (*Web of Science*, *Scopus* and *Google Schoolar*) using the combination of the common and scientific names of species and terms referring to the geographical area. For each publication found its own reference list was inspected. Additionally, we present our documented recent records of the species obtained in our intensive bird surveys in southeastern Rio Grande do Sul carried out between 2008 and 2010.

We had access to information about the two old specimens whose origin was questioned by Belton (1994). The first represents a skin of a sub-adult male labeled as having been collected in 1881 by Joyner in Pelotas and is currently found in the British Museum of Natural History (BMNH 1885.6.7.363) (Hein van Grouw, *personal communication*). However, it is not possible to confirm the origin of this specimen because Joyner's collection has been discredited given that it contains species that have never been recorded around Pelotas (Ihering 1899; Belton 1994).

The second specimen corresponds to a skin of an adult male found in the National Museum of Natural History (MNHN 1892-1981), in Paris, as quoted by Hellmayr (1936). The label indicates that this specimen was collected in Pelotas in 1884 by "von Ritter" (Figure 1; Jean-Marc Pons and Anne Previato, *personal communication*). Carlos Ritter lived in Pelotas at the time and probably collected and sent the specimen to Ihering who, in turn, may have sent it to Count Hans von Berlepsch, in Europe.

Additionally, there is another male specimen in the Senckenberg Museum, Germany (Gerald Mayr, *personal communication*). The label (number 59104) indicates that it was collected in "Camaquan - Rio Grande do Sul" by Ihering on 24 July 1888. This site probably corresponds to the mouth of the Rio Camaquã, where Ihering resided at the time. Curiously, Ihering did not refer to this specimen in later publications (Ihering 1889). This suggests that it was sent to Hans von Berlepsch unidentified or there was

**FIGURE 1.** Skin of an adult male of *Piranga flava* deposited in the National Museum of Natural History (MNHN 1892-1981), Paris. The label (detail) indicates that it was collected in the Pelotas region in 1884 by Carlos Ritter ("v. Ritter"), a collaborator of H. von Ihering. Photo by Anne Previato.

simply insufficient time to include it in the publication, remaining unknown until now. Thus, there is no reason to discredit the origin of these two specimens, which makes possible to infer the occurrence of *Piranga flava* in southeastern Rio Grande do Sul in the late 1800s.

In the literature, we found another male specimen from Rio Grande do Sul. It may be found in the museum collection of Colégio Mauá sited in the municipality of Santa Cruz do Sul. However, its origin cannot be reliably inferred as discussed by Bencke (1997).

In addition to these specimens, we obtained 19 recent records of *P. flava* (Figures 2 and 3) between December 2008 and October 2010 in the southeastern Rio Grande do Sul (Table 1; Figure 4). Fifteen recent records were at the Campus Universitário of the Universidade Federal de Pelotas (UFPEL), one in the Área de Proteção Ambiental Dunas, one on the edge of a woodland patch in the Horto Botânico Irmão Teodoro Luís of UFPEL, one in a riparian forest along Arroio Pelotas and one in a riparian forest of Arroio Candiotinha. The first two sites are mainly urban and the other three are used for livestock grazing and agriculture. All birds were detected by means of vocalizations and 13 of these records included sightings. Thirteen records referred to solitary individuals and the other six involved two or three individuals (Table 1).

**Figure 2.** *Piranga flava* (female) photographed in the municipality of Pelotas, southern Brazil. Photo by F. P. Jacobs.

The avifauna of southeastern Rio Grande do Sul is relatively well known (Belton 1994; Maurício and Dias 1998; 2000). Furthermore, the vocalization, behavior and plumage of *P. flava* make it a conspicuous species (Sick 1997). Thus, the scarcity of records in this region probably reflects the low population density of the species. Moreover, the rarity of the species was also noted in the northeastern Rio Grande do Sul in historical times (Berlepsch and Ihering 1885).

The recent records obtained span over three consecutive years, which demonstrates the regular presence of *P. flava* in southeastern Rio Grande do Sul. Thus, its distribution area is wider in about 300 km from that reported by Belton (1994) and 120 km from that described by Azpiroz (2003), who maps the occurrence of the species throughout Uruguay.

In Rio Grande do Sul, *P. flava* is considered a summer resident that migrates northward after the breeding season (Belton 1994; Bencke 2001). Our study presents recent records covering all seasons and demonstrates that

**Figure 3.** *Piranga flava* (male) photographed in the municipality of Capão do Leão, southern Brazil. Photo by J. Vizentin-Bugoni.

the species can be found all year long in the southeastern Rio Grande do Sul. This fact is consistent with the status of occurrence verified in Uruguay (Azpiroz 2003). However, the possibility that part of the population migrates beyond the limits of Rio Grande do Sul during the non-breeding period (autumn and winter) cannot be excluded.

It is unlikely that the individuals recently recorded are originated from captivity. In the state of Rio Grande do Sul, only two individuals of *P. flava* from the cage bird trade were found among a total of approximately five thousand individuals apprehended by environmental authorities (Araujo *et al*. 2010; Martins-Ferreira and Glock 2004). Furthermore, no individuals of this species were received between 2000 and 2010 in the Center for Rehabilitation of Wild Fauna of UFPEL (Núcleo de Reabilitação da Fauna Silvestre), which is the largest institution responsible for receiving wildlife apprehended from illegal trade within the studied region (Marco Coimbra and Luiz Fernando Minello, *personal communication*).

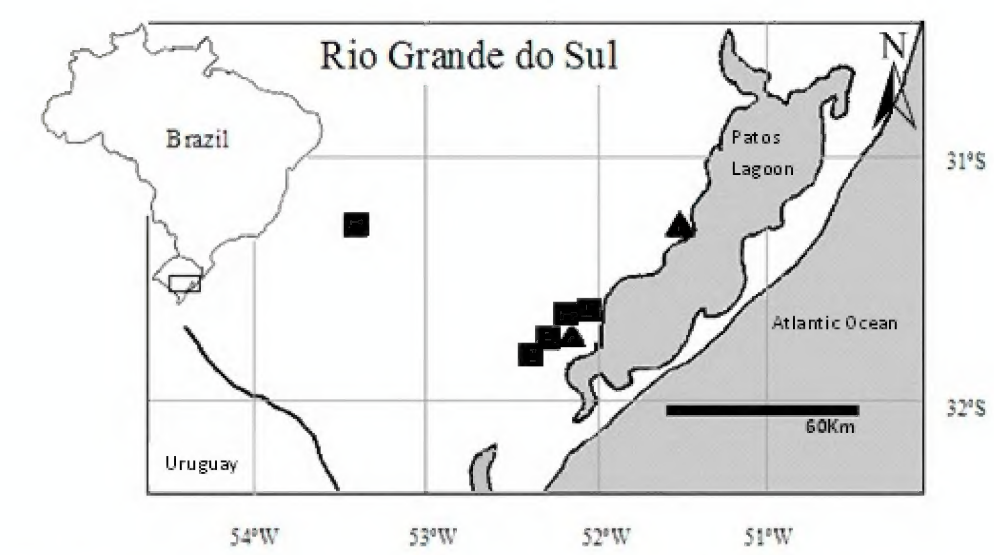


**Figure 4.** Distribution of recent (squares) and historical (triangles) records of *Piranga flava* in southeastern Rio Grande do Sul, southern Brazil. Map produced by Elisa Milach.

Our observations of solitary individuals or small group sizes of *P. flava*, their preference for open habitats and the capacity to explore anthropic areas are consistent with previous descriptions of the species' biology (Narosky and Yzurieta 1987; Sick 1997).

In conclusion, our study confirms the occurrence of *Piranga flava* in the southeastern Rio Grande do Sul in the late 1800's and reports an unknown specimen. Moreover, we show that this species currently occurs in the region, where it can be found all year long.

**Table 1.** Recent records of *Piranga flava* in southeastern Rio Grande do Sul state, southern Brazil, including details of site, date of records, type of evidence and information on group size, habitat and behavior (additional observations). 1 = Tape-record by F.P. Jacobs available on <www.xeno-canto.org/30579>.

| SITE/ MUNICIPALITY | GEOGRAPHIC COORDINATES | DATE OF RECORD | TYPE OF EVIDENCE | ADDITIONAL OBSERVATIONS |
|---|---|---|---|---|
| Campus of Universidade Federal de Pelotas / Capão do Leão | 31°48'00" S, 52°25'03" W | 17 December 2008 | Observed | A single male foraging on insects in *Acacia* leaves. |
| | | 6 March 2009 | Tape-recorded[1] | A female and two males foraging on fruits of *Syzygium jambolanum* (Lam.) DC. (Myrtaceae). |
| | | 7 May 2009 | Heard | One individual calling on top of *Eucalyptus.* |
| | | 26 February 2010 | Observed | A single female calling perched on *Luehea divaricata* Mart. (Malvaceae) top. |
| | | 8 March 2010 | Observed | A female and a male calling in *Eucalyptus* treetop. |
| | | 12 May 2010 | Heard | One individual calling amidst a clump of *Melaleuca leucadendra* (L.) L. (Myrtaceae). |
| | | 17 May 2010 | Heard | One individual calling in *Eucalyptus* treetop. |
| | | 1 July 2010 | Observed | A single male calling in a tree. |
| | | 14 July 2010 | Observed | A single male calling in *Eucalyptus* treetop. |
| | | 20 July 2010 | Observed | A single male calling in *Eucalyptus* treetop. |
| | | 30 July 2010 | Observed | A female and a male foraging on insects on *Schinus* leaves. |
| | | 06 August 2010 | Photographed | A female and a male foraging on insects in *M. leucadendra* leaves. |
| | | 13 September 2010 | Heard | At least two individuals calling in *Eucalyptus* treetop. |
| | | 27 September 2010 | Heard | One individual calling in *Eucalyptus* treetop. |
| | | 13 October 2010 | Heard | One individual calling in *Eucalyptus* treetop. |
| Área de Proteção Ambiental Dunas / Pelotas | 31°45'51" S, 52°15'21" W | 27 April 2009 | Photographed | A single female calling perched on isolated *Pinus.* |
| Horto Botânico Irmão Teodoro Luís / Capão do Leão | 31°48'47" S, 52°26'11" W | 8 May 2009 | Observed | A single female calling in *Eucalyptus* treetop at edge of forest patch. |
| Arroio Pelotas / Pelotas | 31°40'28" S, 52°12'21" W | 14 August 2009 | Observed | A male and a female calling perched on isolated tree. |
| Arroio Candiotinha / Pinheiro Machado | 31°30'21" S, 53°33'10" W | 16 November 2009 | Observed | A single male calling and singing in the canopy of riparian forest |

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